



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,452	04/16/2004	Stephen K. Pinto	17146-002001	1042
26161 7590 09/10/2008 FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022				
EXAMINER BHARADWAJ, KALPANA				
ART UNIT 2129		PAPER NUMBER		
NOTIFICATION DATE 09/10/2008		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Office Action Summary

Application No.

10/826,452

Applicant(s)

PINTO ET AL.

Examiner

KALPANA BHARADWAJ

Art Unit

2129

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/S5/ICE)
Paper No(s)/Mail Date 06/13/2008
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office Action is in response to a Request for Continued Examination filed June 13, 2008 for application number 10/826,452.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 13, 2008 has been entered.

Status of Claims

3. Claims 1-27 are pending.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-7, 9-25 and 27 rejected under 35 U.S.C. 103(a) as being unpatentable over Eder (USPN 6,321,205 B1, referred to as **Eder**), and further in view of Thomason (USPN 2005/0004786).

As to **Claim 1**, Eder discloses a machine-based method comprising
in connection with a predictive model development project (**Eder**, C 39 L 40: components of all defined enterprises; **Fig. 7**, 50: Application Database; **EN**: an enterprise is a project) in which a user interacts with a computer application in a succession of steps to generate a predictive model (**Eder**, C 39 L 36: Predictive Model Specification) based on historical data about a system being modeled (**Eder**, C 23 L 09: based on historical information) , the user's progress in developing the model having a state at each of the successive steps, automatically storing structured project information that captures a state of the project (**Eder**, C 25 L 52: state of each node; **EN**: nodes are associated with the enterprise (**Eder**, C 39 L 60: nodes for the network)) at each of the successive steps (**Eder**, C 07 L 04: major processing steps; **Fig 1**: The processing steps involve databases at successive steps that represent storage) in generating the model;

Eder does not teach: the successive steps of the project being re-entrant based on the stored structured project information so that the user can make revisions to the project without restarting the project.

However, Thomason teaches the successive steps of the project being re-entrant based on the stored structured project information so that the user can make revisions to the project without restarting the project (**Thomason**, ¶ 0058: modeling schemes ... handle re-entrant and recursive calls).

Eder and Thomason are from the same field of endeavor, model based systems. It would have been obvious to one of ordinary skill in the art to have modified Eder's model with re-entrant properties, for the benefit of being able to change model parameters at runtime.

As to **Claim 2**, cEder discloses the method of claim 1 in which the system comprises behavior (**Eder**, C 27 L 64 Table 23: behavior of dynamic systems) of prospective customers of a vendor with respect to a product or service offered by the vendor (**Eder**, C 05 L 63: vendor relationships); behavior of prospective customers belonging to a population of potential customers (**Eder**, C 05 L 59 Table 1: Customers, Correlation to components of value) with respect to a product or service; or behavior of current customers with respect to a current product or service (**Eder**, C 05 L 65 Table 1: Brand Names, Correlation to component(s) of value).

As to **Claim 3**, Eder discloses the method of claim 1 in which the predictive model predicts (**Eder**, C 39 L 36: Predictive Model Specification) behavior of a prospective or current customer with respect to purchase of or payment (**Eder**, C 05 L 51 Table 1: Prepaid Expenses, L 48: Accounts Receivable) for a product or service of a vendor.

As to **Claim 4**, Eder discloses the method of claim 1 in which the predictive model predicts (**Eder**, C 39 L 36: Predictive Model Specification) behavior of a current customer with respect to retention of a current service (**Eder**, C 15 L 09: tracking requests for service; **EN**: tracking is done to establish the status and make decisions on retention or deletion of a service; a service could be a product or a vendor) or product of a vendor.

As to **Claim 5**, Eder discloses the method of claim 1 in which the predictive model predicts (**Eder**, C 39 L 36: Predictive Model Specification) behavior of a current customer with respect to risk of asserting claims, loan payment or prepayment to a vendor (**Eder**, C 21 L 16 Table 16: Account payment data; C 22 L 54 Table 20: Liability Account).

As to **Claim 6**, Eder discloses the method of claim 1 in which the predictive model predicts (**Eder**, C 39 L 36: Predictive Model Specification) behavior of a current customer with respect to usage of a current service or product (**Eder**, C36 L 54: Element of value usage) of a vendor.

As to **Claim 7**, Eder discloses the method of claim 1 in which the project information comprises model process validation (**Eder**, C 28 L 21: cross validation algorithm is used for model selection) and at least two of: project objectives, project

schedules, project requirements (**Eder**, C 25 L 58: neural network requires; **EN**: neural network is used to model a project and hence its requirements would use project requirements data for training), information about the historical data (**Eder**, C 23 L 09: based on historical information), model ensembles and outputs of the model (**Eder**, C 24 L 60-63: neural network; output nodes; C 25 L 53: generate an output variable; **EN**: Neural Network is the model).

As to **Claim 9**, Eder discloses the method of claim 1 also including enabling a user to refine a previous (**Eder**, Fig. 7, Elements 402 & 404: Retrieve information for next growth option; **EN**: applying growth information to update a database is a process of refining; C 45 L 33: improvement analysis) project based on the stored structured project information (**Eder**, Fig. 7, 50: Application Database).

As to **Claim 10**, Eder discloses the method of claim 1 also including enabling a user to apply the model generated in the project based on the stored structured project information (**Eder**, Fig. 7, Elements 50, 412; **EN**: Application database inputs data to a model to generate a scenario).

As to **Claim 11**, Eder discloses a machine-based method comprising in connection with a project in which a user generates a predictive model based on historical data (**Eder**, C 23 L 09: based on historical information) about a system being modeled, storing in a common location (**Eder**, C 07 L 16: aggregating and storing; **EN**:

aggregate is to combine) project information that includes a model validation process and at least two of: project objectives, project schedules, project requirements (**Eder**, C 25 L 58: neural network requires; **EN**: neural network is used to model a project and hence its requirements would use project requirements data for training), information about the historical data (**Eder**, C 23 L 09: based on historical information), equations expressing the model, performance characteristics of the model, and outputs of the model (**Eder**, C 24 L 60-63: neural network is determined; output nodes; C 25 L 53: generate an output variable; **EN**: Neural network is the model), steps of the project being re-entrant based on the stored structured project information so that the user can make revisions to the project without restarting the project.

As to **Claim 12**, Eder discloses the method of claim 11 in which the system comprises behavior (**Eder**, C 27 L 64 Table 23: behavior of dynamic systems) of customers (**Eder**, C 05 L 59 Table 1: Customers) of a vendor with respect to products offered by the vendor (**Eder**, C 05 L 63: vendor relationships; Correlation to component(s) value).

As to **Claim 13**, Eder discloses the method of claim 11 in which the predictive model predicts behavior of a prospective or current customer (**Eder**, C 05 L 59 Table 1: Customers) with respect to purchase of a product (**Eder**, C 05 L 51 Table 1: Production Equipment; C 03 L 28: purchasing all or part of the business) or service of a vendor.

As to **Claim 14**, Eder discloses the method of claim 11 in which the predictive model predicts behavior of a current customer with respect to retention of a current service (**Eder**, C 15 L 09: tracking requests for service) or product of a vendor.

As to **Claim 15**, Eder discloses the method of claim 11 in which the predictive model predicts behavior of a current customer with respect to risk of asserting claims, loan payment or prepayment to a vendor (**Eder**, C 21 L 16 Table 16: Account payment data; C 22 L 54 Table 20: Liability Account).

As to **Claim 16**, Eder discloses the method of claim 11 in which the predictive model predicts behavior of a current customer with respect to usage (**Eder**, C36 L 54: Element of value usage) of a current service or product of a vendor.

As to **Claim 17**, Eder discloses the method of claim 11 in which the project information comprises model process validation (**Eder**, C 28 L 21: cross validation algorithm is used for model selection) and at least two of: project objectives, project schedules, project requirements (**Eder**, C 25 L 58: neural network requires; **EN**: neural network is used to model a project and hence its requirements would use project requirements data for training), information about the historical data, model ensembles and outputs of the model (**Eder**, C 24 L 60-63: neural network; output nodes; C 25 L 53: generate an output variable; **EN**: Neural Network is the model).

As to **Claim 18**, Eder discloses the method of claim 11 in which the common location comprises a file (**Eder**, C 05 L 18: files) or folder maintained by an operating system of a computer (**Eder**, C 05 L 18: computer-based).

As to **Claim 19**, Eder discloses the method of claim 11 also including enabling a user to refine a previous project (**Eder**, Fig. 7, Elements 402 & 404: Retrieve information for next growth option; **EN**: applying growth information to update a database is a process of refining; C 45 L 33: improvement analysis) based on the stored structured project information.

As to **Claim 20**, Eder discloses a machine-based method comprising enabling users to engage in predictive model development projects to generate predictive models based on historical data about systems being modeled, and applying a common project tracking paradigm (**Eder**, C 06 L 47: ability to track the changes in elements) to manage the generation of the models (**Eder**, Abstract: define a financial simulation model such as a Markov Chain Monte Carlo model) by the users and to store project progress tracking information associated with the respective models in a common format (**Eder**, C 06 L 53: produces reports in formats that are similar to reports provided by traditional systems).

Eder does not teach: steps in each model generation being re-entrant based on the project tracking paradigm so that the users can make revisions to the project without restarting the project.

However, Thomason teaches steps in each model generation being re-entrant based on the project tracking paradigm so that the users can make revisions to the project without restarting the project (**Thomason**, ¶ 0058: modeling schemes ... handle re-entrant and recursive calls).

Eder and Thomason are from the same field of endeavor, model based systems. It would have been obvious to one of ordinary skill in the art to have modified Eder's model with re-entrant properties, for the benefit of being able to change model parameters at runtime.

As to **Claim 21**, Eder discloses the method of claim 20 in which the predictive models each predicts behavior of a prospective or current customer (**Eder**, C 05 L 59 Table 1: Customers) with respect to purchase of a product (**Eder**, C 05 L 51 Table 1: Production Equipment; C 03 L 28: purchasing all or part of the business) or service of a vendor.

As to **Claim 22**, Eder discloses the method of claim 20 in which the predictive models each predicts behavior of a current customer with respect to retention of a current service (**Eder**, C 15 L 09: tracking requests for service; **EN**: tracking is done to

establish the status and make decisions on retention or deletion of a service; a service could be a product or a vendor) or product of a vendor.

As to **Claim 23**, Eder discloses the method of claim 20 in which the predictive model predicts behavior of a current customer with respect to risk of asserting claims, loan payment or prepayment to a vendor (**Eder**, C 21 L 16 Table 16: Account payment data; C 22 L 54 Table 20: Liability Account).

As to **Claim 24**, Eder discloses the method of claim 20 in which the predictive model predicts behavior of a current customer with respect to usage of a current service (**Eder**, C36 L 54: Element of value usage) or product of a vendor.

As to **Claim 25**, Eder discloses the method of claim 20 in which the project information comprises model process validation and at least two of: project objectives, project schedules, project requirements (**Eder**, C 25 L 58: neural network requires; **EN**: neural network is used to model a project and hence its requirements would use project requirements data for training), information about the historical data (**Eder**, C 23 L 09: based on historical information), model ensembles and outputs of the model (**Eder**, C 24 L 60-63: neural network is determined; output nodes; C 25 L 53: generate an output variable; **EN**: Neural network is the model).

As to **Claim 27**, Eder discloses the method of claim 20 also including enabling a user to refine a previous project (**Eder**, Fig. 7, Elements 402 & 404: Retrieve information for next growth option; **EN**: applying growth information to update a database is a process of refining; also see C 45 L 33: improvement analysis) based on the stored structured project information.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 8 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eder (USPN. 6,321,205 B1, referred to as **Eder**) and Thomason, as applied to claims 1-7 above and further in view of Amado (USPN 5701400, referred to as **Amado**)

As to **Claim 8**, Eder teaches the method of claim 1 also including enabling a user to store structured project information (**Eder**, C 21 L 34: value is stored in the element). Eder modified by Thomason, does not teach replicating a project based on the stored project information. However, Amado teaches replicating (**Amado**, C 26 L 65: replicate the data into the invention's own database).

It would be obvious to one skilled in the art at the time the invention was made to combine the two because they are both in the field of Artificial Intelligence and deal with

using predictive models. Further, by applying replication to Eder's system, a copy of the overall data structure can be created without having to rebuild the system.

As to **Claim 26**, Eder teaches the method of claim 20 also including enabling a user to store structured project information (**Eder**, C 21 L 34: value is stored in the element). Eder modified by Thomason does not teach replicating a project based on the stored project information. However, Amado teaches replicating (**Amado**, C 26 L 65: replicate the data into the invention's own database).

It would be obvious to one skilled in the art at the time the invention was made to combine the two because they are both in the field of Artificial Intelligence and deal with using predictive models. Further, by applying replication to Eder's system, a copy of the overall data structure can be created without having to rebuild the system.

Response to Arguments

1. Applicant's arguments filed Apr 16, 2004 have been fully considered but they are not persuasive.

2. Regarding Applicant's arguments on page 1-2:

... successive steps ...re-entrant based ..

Examiner's response:

Applicant's argument regarding "successive steps ...re-entrant based ..." are moot with respect to the new grounds of rejection

3. Regarding Applicant's arguments on page 3:

Eder does not include a model validation process.

Examiner's response:

The Examiner re-emphasizes her stand that Eder discloses neural network (C25 L58). A neural network model involves training data that is repeatedly input to the model until the output matches the desired output, which is the same as 'validation' and the process is called 'learning' .

Examinations Considerations

8. Examiner's Notes (**EN**) are provided with the cited references to prior art to assist the applicant to better understand the nature of the prior art, application of such prior art and, as appropriate, to further indicate other prior art that maybe applied in other office actions. Such comments are entirely consistent with the intent and spirit of compact prosecution. However, and unless otherwise stated, the Examiner's Notes are not prior art but a link to prior art that one of ordinary skill in the art would find inherently appropriate.

9. Examiner has cited particular columns and line numbers (or paragraphs) in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the Applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed

invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. The entire reference is considered to provide disclosure relating to the claimed invention.

Conclusion

10. Claims 1-27 are rejected.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KALPANA BHARADWAJ whose telephone number is (571)270-1641. The examiner can normally be reached on Monday-Friday 7:30am 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Vincent can be reached on (571) 272-3080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bharadwaj Kalpana/
Examiner, Art Unit 2129
/David R Vincent/
Supervisory Patent Examiner, Art Unit 2129